

REMARKS

In reply to the Office Action of April 1, 2009, Applicants have: amended claims 1, 22, 23, and 49; canceled claims 11-12 and 21; and added new claim 52. Accordingly, claims 1-10, 13-20, 22-34, 42-45, and 47-52 are pending, with claims 1, 49, and 52 in independent form.

Applicants thank the Examiner for indicating that each of claims 32 and 34, if rewritten in independent form, would be allowable. Although Applicants have elected not to rewrite claims 32 and 34 at this time, Applicants reserve the right to do so in future.

Claim 24 stands objected to, the Action alleging that the limitation "said mirror layer" lacks antecedent basis. Claim 24 depends from claim 1, and Applicants have amended claim 1 in this reply to recite a mirror layer. Accordingly, Applicants believe the objection to claim 24 is now moot, and respectfully request its withdrawal.

Claim 26 stands objected to, the Action alleging that the limitation "said carrier" lacks antecedent basis. Claim 26 depends from claim 25, which in turn depends from claim 1. Applicants have amended claim 1 in this reply to recite a carrier. Accordingly, Applicants believe the objection to claim 26 is now moot, and respectfully request its withdrawal.

Claims 1, 3, 5-15, 17, 19-22, 25-27, 33, 44-45, and 48-51 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Ou et al. (U.S. Patent Application Publication No. US 2004/0090779, "Ou"). Without conceding the merits of the proposed claim rejections, but to expedite prosecution, Applicants have amended each of independent claims 1 and 49 in this reply to include certain limitations of previous claims 11, 12, and 21. As amended, claims 1 and 49 recite a "carrier supporting the semiconductor body," a first current spreading layer "positioned between the semiconductor body and the carrier," and "a mirror layer disposed on a side of the first current spreading layer that faces away from the semiconductor layer sequence." Applicants submit that Ou neither discloses nor suggests the semiconductor components covered by amended claims 1 and 49.

In the Office Action, claims 11 and 12 stand rejected, the Action alleging that "Ou teaches the radiation-emitting semiconductor component ... wherein disposed on at least one of said current spreading layers is a mirror layer (Au layer 19, which reflects light, thus may be

used as a mirror, see paragraph [0021])” (Action at page 4). The Action further alleges that in Ou, “said mirror layer (layer 19 in fig. 3) is disposed on the side of said current spreading layer facing away from said semiconductor layer sequence (layers 11-17)” (Action at page 5).

Each of amended claims 1 and 49 requires that the mirror layer is “disposed on a side of the first current spreading layer,” where the first current spreading layer is “positioned between the semiconductor body and the carrier.” In other words, claims 1 and 49 require that the carrier and the mirror layer are positioned on the *same* side of the semiconductor layer sequence. Support for the amendments to claims 1 and 49 is found, for example, in Applicants’ specification at pages 10-12, and in Figures 1-3. As discussed in these portions of the specification, contact surface 13 is positioned on the opposite side of the semiconductor layer sequence (e.g., on second current spreading layer 10).

With regard to Figure 3 of Ou, Applicants submit that substrate 10a corresponds most closely with the “carrier” recited in claims 1 and 49, and to layer 1 in Figures 1-3 of Applicants’ specification. Accordingly, Ou’s electrode 19 is not “disposed on a side of the first current spreading layer,” where the first current spreading layer is “positioned between the semiconductor body and the carrier,” as claims 1 and 49 require. Instead, in Ou’s device, contact layer 20 corresponds most closely with the first current spreading layer recited by the claims, and contact layer 18 corresponds most closely with the second current spreading layer. Thus, to the extent that contact layers 20 and 18 correspond to the recited current spreading layers, Ou’s electrode 19 is positioned on a side of the *second* current spreading layer, not on a side of the first current spreading layer.

Moreover, Applicants submit that electrode 19 does not correspond to the mirror layer recited by claims 1 and 49. Instead, in the context of the present application, Applicants believe that electrode 19 corresponds most closely with contact surface 13 of Applicants’ specification, not mirror layer 2. As discussed in Applicants’ specification, “[t]he mirror layer reduces absorption losses in any layers disposed under it, such as for example a substrate or a carrier, and forms with the current spreading layer a high-efficiency electrical mirror contact for contacting the semiconductor component” (specification at page 4, paragraph 3). The specification also

discloses that “[t]he mirror layer is particularly preferably disposed on that side of the current spreading layer on the first principal surface that faces away from the semiconductor layer sequence” (specification at page 4, paragraph 3). In other words, the mirror layer assists in reducing absorption losses in underlying layers, and is therefore positioned *between* layers in a semiconductor component. As shown in Applicants’ Figure 1, for example, mirror layer 2 is positioned between first current spreading layer 3 and carrier 1 to reduce absorption losses in carrier 1. Claims 1 and 49 have been amended to clarify that the mirror layer is “disposed on a side of the first current spreading layer,” which is itself “positioned between the semiconductor body and the carrier.”

Based on Applicants’ disclosure and the pending claims, Ou’s electrode 19 does not correspond to the recited mirror layer. Electrode 19 is not positioned to reduce absorption losses in underlying layers. Instead, as shown in Figure 3 of Ou, electrode 19 is formed on top of the layer stack, and extends over only a portion of contact layer 18. There are no layers underlying electrode 19 in which to reduce absorption losses in Ou’s device, and by extending over only a portion of the layer stack, electrode 19 would form a relatively inefficient mirror layer. Further, electrode 19 is positioned on a radiation *output* surface of Ou’s device. Electrode 19 therefore does not function as mirror layer in the manner disclosed in the present application. If it did, electrode 19 would *reduce* the amount of light emitted from Ou’s device. In fact, the more efficient electrode 19 would be in acting as a mirror layer, the *less efficient* the overall output from Ou’s device.

Accordingly, Applicants submit that electrode 19 does not correspond to a mirror layer in the context of the present application and pending claims, and Applicants have further been unable to find any disclosure in Ou relating to a mirror layer positioned on a first current spreading layer, as required by the pending claims. Thus, Applicants believe that amended claims 1 and 49 are patentable over Ou, and respectfully request reconsideration and withdrawal of the rejections of these claims under 35 U.S.C. § 102(e).

Each of claims 3, 5-10, 13-15, 17, 19-20, 22, 25-27, 33, 44-45, 48, and 50-51 depends from claim 1 or claim 49, and is therefore patentable over Ou for at least the same reasons

discussed above. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of these claims under 35 U.S.C. § 102(e).

Claims 2, 4, 16, and 28-31 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ou in view of Chen et al. (U.S. Patent Application Publication No. US 2002/0137244, "Chen '244"). Claims 23-24 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ou in view of Chen et al. (U.S. Patent Application Publication No. US 2004/0046182, "Chen '182"). Claims 18 and 42-43 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ou in view of Hata et al. (U.S. Patent Application Publication No. US 2002/0190263, "Hata"). Claim 47 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ou in view of Chua et al. (U.S. Patent Application Publication No. US 2005/0158902, "Chua"). Without addressing or conceding the merits of any of these rejections, Applicants note that claims 2, 4, 16, 18, 23-24, 28-31, 42-43, and 47 each depend on claim 1, and are therefore patentable over Ou for at least the same reasons.

None of Chen '244, Chen '182, Hata, or Chua cures the deficiencies of Ou with regard to claim 1, at least because Applicants believe that none of these references discloses a mirror layer in the context of the present application that is "disposed on a side of the first current spreading layer that faces away from the semiconductor layer sequence" as required by claim 1. Therefore claim 1 is patentable over Ou, Chen '244, Chen '182, Hata, and Chua. For at least the same reasons, each of claims 2, 4, 16, 18, 23-24, 28-31, 42-43, and 47 is also therefore patentable over Ou, Chen '244, Chen '182, Hata, and Chua. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 2, 4, 16, 18, 23-24, 28-31, 42-43, and 47 under 35 U.S.C. § 103(a).

New independent claim 52 has been added in this reply, and recites semiconductor components that include "a mirror layer disposed on a side of the first current spreading layer that faces away from the semiconductor layer sequence, the mirror layer completely covering the side of the first current spreading layer." Support for this claim is found, for example, in previous claims 1 and 49, and in Applicants' specification in Figures 1-3.

As discussed above in connection with the other independent claims, Applicants do not agree that Ou's electrode 19 corresponds to a mirror layer. However, even if, for the sake of argument only, electrode 19 did form a mirror layer, electrode 19 does not completely cover the side of the first current spreading layer in Ou's device. Further, as discussed above, Applicants can find no reason in Ou to extend electrode 19 to completely cover the top surface of Ou's device, as doing so would conceivably block much if not all of the light output from Ou's device. Therefore, regardless of the disclosure provided by Chen '244, Chen '182, Hata, and Chua, a person of ordinary skill in the art at the time of the invention would have had no reason to modify Ou to include a mirror layer that completely covers a side of the first current spreading layer in Ou's device. Accordingly, Applicants believe that new independent claim 52 is patentable over Ou, Chen '244, Chen '182, Hata, and Chua, and respectfully request that claim 52 be allowed.

In view of the foregoing, Applicants ask that the application be allowed.

Canceled claims, if any, have been canceled without prejudice or disclaimer. Any circumstance in which Applicants have: (a) addressed certain comments of the Examiner does not mean that Applicants concede other comments of the Examiner; (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims; or (c) amended or canceled a claim does not mean that Applicants concede any of the Examiner's positions with respect to that claim or other claims.

No fees are believed to be due. Please apply any charges or credits to Deposit Account 06-1050, referencing Attorney Docket No. 12406-0147US1.

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Respectfully submitted,

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/Marc M. Wefers Reg. No. 56,842/

Marc M. Wefers
Reg. No. 56,842

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

22223902.doc